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13. ABSTRACT (Maximum 200 words) The program for the conference covers a broad range of topics, including polyions and block ionomers in solution, self-assembly and pattern recognition, electro-phoresis and polyelectrolyte gels, inorganic mesophases and nano-composites, ionomer theory and block ionomer surfaces, ionomer phase behavior and micro-structures, dendrimers and graft copolymers. Four lectures were set aside to cover the recent advances in fuel cells with emphasis on PEM fuel cells. New results were presented on polyelectrolyte and ionomer experiments which provided further development on theory related to charged polymer structure, conformation and self-assembly behavior. The advances in creating inorganic nano-structured materials look particularly interesting and promising. The sessions on fuel cells were well received. <div style="text-align: right;"> </div>				
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FINAL REPORT

Gordon Conference on Ion-Containing Polymers

The Gordon Conference on "Ion-Containing Polymers" was held July 9-14, 1995 at Colby-Sawyer College (South) in New London, New Hampshire. The conference had 100 participants with more than one quarter of the participants coming from foreign countries. There was a healthy mixture of scientists from universities (~60%), national laboratories (~10%) and private industries (~30%), including graduate students/post-doctorates (~1/4), young scientists and established scientists.

The program for the conference covers a broad range of topics, including polyions and block ionomers in solution, self-assembly and pattern recognition, electrophoresis and polyelectrolyte gels, inorganic mesophases and nano-composites, ionomer theory and block ionomer surfaces, ionomer phase behavior and microstructures, dendrimers and graft copolymers. Four lectures were set aside to cover the recent advances in fuel cells with emphasis on PEM fuel cells. There were twenty speakers and nine discussion leaders in order to provide ample time for discussions and active participation by the conferees. Two separate poster sessions with a total of 45 posters were held, one each on Tuesday and Wednesday evenings, after the evening lecture. Many conferees liked the quality and information content of the posters.

New results were presented on polyelectrolyte and ionomer experiments which provided further development on theory related to charged polymer structure, conformation, and self-assembly behavior. The advances in creating inorganic nano-structured materials look particularly interesting and promising. The sessions on fuel cells were well received.

Many conferees expressed their satisfaction and personally congratulated the Chairman on the success of this conference.

The support by the U.S. Army Research Office has been gratefully acknowledged. I certify that funds provided by the Army Research Office under Grant DAAH04-95-1-0410 were expended in accordance with the provisions of the grant and that required scientific reports have been delivered to the Army Research Office.

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Benjamin Chu, Chairman
Department of Chemistry
State University of New York
Stony Brook, NY 11794-3400
Tel: (516) 632-7928
FAX: (516) 632-7960

Charles Martin, Vice Chairman
Department of Chemistry
Clemson University
Clemson, SC 29634-1905
Tel: (803) 656-3065
FAX: (803) 656-6613

PROGRAM

Day, Date	Speaker & Title	Discussion Leader
MONDAY 7/10/95	A.M. Polyions and Block Ionomers in Solution	Dr. Eric Amis NIST
	Professor Manfred Schmidt, Universitat Bayreuth "Interparticle Interaction and Molecular Conformation of Polyions in Solution"	
	Professor Chi Wu, The Chinese University of Hong Kong "Light-Scattering Study of Complexation Behavior of Block Ionomers"	
	Self-Assembly & Pattern Recognition	
	Professor M. Muthukumar, University of Massachusetts "Self-Assembly and Pattern Recognition of Polyelectrolytes"	
	Posters for Poster Session I in position on Monday afternoon (by 2:30 pm).	
	P.M. Electrophoresis and Polyelectrolyte Gel	Prof. Robert K. Prud'homme Princeton University
	Professor Gilbert Weill, CNRS et Universite L. Pasteur "The Effective Charge of Polyelectrolytes in Electrophoresis"	
	Professor Dietrich Woermann, University of Koln "Transport Properties and Structure of a Polyelectrolyte Gel"	
TUESDAY 7/11/95	A.M. Inorganic Mesophases and Nanocomposites	Dr. Raymond Farinato Cytec Industries
	Professor Kenneth Mauritz, University of Southern Mississippi "Ionomer-Based Organic and Inorganic Nanocomposites"	
	Professor Bradley F. Chmelka, University of California, Santa Barbara "Ionic Interactions in Surfactant-Inorganic Mesophases"	
	Ionomer Theory	
	Professor Alexei Khokhlov, Moscow State University "Statistical Theory of Ionomers: Superstrong Segregation and Disc-Like Multiplets"	
	P.M. Block Ionomer Surfaces	Prof. Richard Register Princeton University
	Professor Miriam Rafailovich, State University of New York "Ionomeric Polymers at Interfaces"	
	Poster Session I (with a very short oral presentation) Dr. Charles Martin	

WEDNESDAY
7/12/95

**A.M. Ionomer Phase Behavior
and Microstructures**

Dr. Claudine Williams
CNRS - Lure

Professor Robert Weiss, University of Connecticut
"Phase Behavior of Ionomer/Polymer Blends"

Dr. Dan Q. Wu, DuPont
"Synchrotron SAXS Studies of NAFION Morphology"

Dr. Jaan Noolandi, Xerox Research Centre of Canada
"Ordered Microphases in Solid State Ionomers"

(Remove Posters for Session I immediately after lunch)
Posters for Poster Session II in position (by 2:30 pm)

P.M. Dendrimers

Prof. Masanori Hara
Rutgers University

Dr. Donald A. Tomalia, Michigan Molecular Institute
"An Overview of Starburst® Dendrimer Technology and Applications"

Poster Session II

Dr. Charles Martin

THURSDAY
7/13/95

A.M. Graft Copolymers and Fuel Cells I

Prof. Stuart Cooper
University of Delaware

Dr. Dennis G. Peiffer, Exxon Research & Engineering Company
"Synthesis and Behavior of Graft Copolymers formed via Conventional
Methods as well as through Ionic Interactions"

Dr. Keith R. Plowman, Dow USA
"PEM Fuel Cell Systems: The Effect of Membrane Properties on Performance"

Professor Robert F. Savinell, Case Western Reserve University
"Direct Methanol PEM Fuel Cells"

**P.M. Architecture and Morphological
Diversity**

Prof. William M. Risen, Jr.
Brown University

Professor Adi Eisenberg, McGill University
"Architectural and Morphological Diversity in Ion-Containing Polymers"

Michael A. Mabe, Editorial Director, Materials Science
Elsevier Publishing Company, Oxford
"The Scientific Journal, Its Past, Present and Future"

FRIDAY
7/14/95

A.M. Fuel Cells II

Dr. Charles Martin

Professor Howard L. Yeager, University of Calgary
"Conductivity, Percolation Threshold, and Dielectric Properties of Hydrocarbon and
Perfluorinated Ionomers"

Professor Darryl D. DesMarteau, Clemson University
"Synthesis and Properties of Novel Perfluorinated Ionomers Containing Sulfonimide Acid
Functions"

Conference Registration List

ION-CONTAINING POLYMERS

10-Jul-95

1086818

~~PIERRE ALDEBERT~~
~~DRFMC/SESAM~~
~~17, RUE DES MARTYRS~~

~~GRENOBLE, CEDEX 9 38054~~
~~FRANCE~~

~~Phone: 33-76883833~~
~~Fax: 33-76885090~~
~~Email:~~
~~Room: R12~~
~~Participation: S~~

2001327

ERIC J AMIS
NIST
POLYMERS, 224/B210

GAITHERSBURG, MD 20899

Phone: 301-975-6681
Fax: 301-926-8012
Email: AMIS@MICF.NIST.GOV
Room: R12
Participation: D

1001649

I
CHRIS ANDREOLA
ALLIED SIGNAL RAND T
CRL-200, ALLIED SIGNAL, INC
P O BOX 1021
MORRISTOWN, NJ 07962

Phone: 201-455-3449
Fax: 201-455-5295
Email:
Room: OFF
Participation: A

1091347

U
HANY M AZIZ
MCMASTER UNIVERSITY
DEPT OF MATERIALS SCIENCE & ENGINEER
1280 MAIN STREET WEST
HAMILTON, ONTARIO L8V 5C2
CANADA

Phone: 905 525 9140X
Fax: 905 528 9295
Email:
Room: C3165
Participation: P

1003005

I
WILLIAM S BAHARY
UNILEVER RESEARCH
45 RIVER ROAD

EDGEWATER, NJ 07020

Phone: 201 943 7100
Fax: 201 943 5653
Email:
Room: C3265
Participation: A

1088851

I
DAVID B BAILEY
EASTMAN KODAK CO
1999 LAKE AVE

ROCHESTER, NY 14650-2116

Phone: 716 477 8449
Fax:
Email:
Room: R34
Participation: A

1088832

U
LAJOS BALOGH
UNIVERSITY OF MASSACHUSETTS LOWELL
DEPT OF CHEMISTRY
ONE UNIVERSITY AVE
LOWELL, MA 01854

Phone: 508-934-3828
Fax: 508-934-3013
Email:
Room: OFF
Participation: P

1004179	DANIEL W BAUGH UNIVERSITY OF SOUTHERN MISSISSIPPI SS BOX 10076 DEPT. OF POLYMER SCIENCE HATTIESBURG, MS 39406	Phone: 601-266-5055 Fax: 601-266-5504 Email: DWBAUGH@WHALE.ST.USM.EDU Room: C3166 Participation: A
1091349	C E BECZE MCMASTER UNIVERSITY DEPT MATERIALS SCIENCE HAMILTON, ONTARIO L8S 4L7 CANADA	Phone: 905 525 9140X Fax: 905 528 9295 Email: Room: C3173 Participation: P
1004780	MICHELLE BELLINGER SPALDING SPORTS WORLDWIDE 425 MEADOW STREET, PO BOX 901 CHICOPEE, MA 01021-0901	Phone: 413 536 1200 Fax: 413 536 4831 Email: Room: P3095 Participation: A
1092106	SAUMITRA BHARGAVA UNIV OF DELAWARE CHEM ENG DEPT NEWARK, DE 19716	Phone: 302 831 2347 Fax: 302 831 1048 Email: BHARGAVA@CHE.UDEL.EDU Room: C3173 Participation: P
1006113	AMIT BISWAS DUPONT EXPERIMENTAL STATION P.O. BOX 80536 WILMINGTON, DE 19880-0356	Phone: 302-695-3603 Fax: 302-695-8207 Email: BISWASA@ESVAX.DNET.DUPONT. Room: OFF Participation: A
1006560	ALEXANDER BLUMSTEIN UNIVERSITY OF MASS. LOWELL DEPT. OF CHEMISTRY ONE UNIVERSITY AVENUE LOWELL, MA 01854	Phone: 508-934-3685 Fax: 508-934-3013 Email: Room: C3373 Participation: A
1090129	WARREN H BUCK DUPONT FLUOROPRODUCTS EXPERIMENTAL STATION P.O. BOX 80293 WILMINGTON, DE 19880-0293	Phone: 302-695-4436 Fax: 302-695-8617 Email: WHBUCK@A1.ESVAX.UMC.DUPON Room: C3174 Participation: A
1009895	DONALD A CAMERON UNIV OF FLORIDA DEPT OF CHEMISTRY BOX 117200 GAINESVILLE, FL 32611-7200	Phone: 904-392-2000 Fax: 904 392 9741 Email: DACAME@UFCC.UFL.EDU Room: C3175 Participation: P

1091881	KAUSHIK CHAKRABARTY UNIV OF CONN, INSTITUTE OF MATERIALS SCIENCE, POLYMER SCIENCE PROGRAM BOX U-136, 97 NORTH EAGLEVILL ROAD STORRS, CT 06269	Phone: 203 486 2290 Fax: 203 486 4745 Email: KAC94002@UCONNVM.UCONN.ED Room: R34 Participation: P
1012301	BRAD F CHMELKA UNIVERSITY OF CALIFORNIA - SANTA BARB DEPARTMENT OF CHEMICAL ENGINEERING ENGINEERING II SANTA BARBARA, CA 93106-5080	Phone: 805-893-3673 Fax: 805 893-4731 Email: BRADC@ENGINEERING.UCSB.ED Room: R12 Participation: S
1012556	BENJAMIN CHU STATE UNIV. OF NEW YORK AT STONY BRO CHEMISTRY DEPARTMENT STONY BROOK, NY 11794-3400	Phone: 516-632-7928 Fax: 516-632-7960 Email: BCHU@SBCCMAIL.BITNET Room: R13 Participation: C
1013379	RALPH H COLBY EASTMAN KODAK COMPANY IMAGING RESEARCH & ADVANCED DEVELO ROCHESTER, NY 14650-2109	Phone: 716-477-5031 Fax: 716 477 6498 Email: RHC@PAS.ROCHESTER.EDU Room: M3180 Participation: A
1013978	STUART L COOPER UNIVERSITY OF DELAWARE 135 DUPONT HALL COLLEGE OF ENGINEERING NEWARK, DE 19716	Phone: 302-831-8017 Fax: 302-831-6751 Email: STUART.COOPER@MVS.UDELED Room: M3180 Participation: D
1092152	STEPHEN V DAVIS UNIV OF SOUTHERN MISSISSIPPI DEPT OF POLYMER SCIENCE BOX 10076 HATTIESBURG, MS 39406	Phone: 601 266 4000 Fax: 601 266 5504 Email: SVDAVIS@WHOLE.ST.USM.EDU Room: C3166 Participation: P
1086819	DARRYL D DESMARTEAU CLEMSON UNIVERSITY DEPARTMENT OF CHEMISTRY BOX 341905 CLEMSON, SC 29634-1905	Phone: 803-656-4705 Fax: 803-656-6613 Email: FLUORINE@CLEMSON.CLEMSON. Room: R13 Participation: S
1019393	A EISENBERG MCGILL UNIVERSITY, CHEMISTRY 801 SHERBROOKE ST W MONTREAL, QUE H3A 2K6 CANADA	Phone: 514-398-6934 Fax: 514-398-3797 Email: Room: M3382 Participation: S

1020127	FLORENCE ESCHBACH MOTOROLA INC WORLDWIDE ENERGY PRODUCTS DIVISIO 8000 WEST SUNRISE BOULEVARD, ROOM 21 FORT LAUDERDALE, FL 33322	Phone: 305-475-6345 Fax: 305-475-5020 Email: EFE002@AMOUL.MOT.COM Room: P3096 Participation: A
1020729	RAY S FARINATO CYTEC INDUSTRIES 1937 W. MAIN STREET STAMFORD, CT 06904	Phone: 203-321-2556 Fax: 203-321-2982 Email: FARINATO@ST.CYTEC.COM Room: R17 Participation: D
1091149	DIETER FAUL BASF AG DEPARTMENT ZKS/A-B1 LUDWIGSHAFEN, 67056 GERMANY	Phone: 0621-60-21796 Fax: 0621-60-20313 Email: Room: M3181 Participation: A
9590003	GEORGE A FLOUDAS FOUNDATION FOR RESEARCH & TECHNOL HELLAS FORTH HERAKLION, GREECE	Phone: 30-81-391465 Fax: 30-81-391305 Email: Room: M3383 Participation: P
1022151	JOHN J FONTANELLA U.S. NAVAL ACADEMY PHYSICS DEPT. ANNAPOLIS, MD 21402-5026	Phone: 410-293-5507 Fax: 410 293 3729 Email: JJF@CHARLESTON.NADN.NAVY.M Room: C3267 Participation: P
1023476	BARBARA GABRYS BRUNEL UNIVERSITY DEPT. OF PHYSICS UXBRIDGE, MIDDLESEX UB8 3PH UK	Phone: 44 1895 203199 Fax: 44 1895 272391 Email: BJG@ISISE.RC.AC.UK Room: P3296 Participation: P
1024699	CONSTANCE L GETTINGE NATIONAL INSTITUTE OF STANDARDS & TE POLYMER BLENDS DIV BUILDING 224, ROOM B210 GAITHERSBURG, MD 20899	Phone: 301-975-6783 Fax: 301-926-8012 Email: CLGETT@ENH.NIST.GOV Room: P3083 Participation: A
1091877	YACOB GHEBREMESKEL UNIV OF CONNECTICUT BOX U-136, IMS STORRS, CT 06269	Phone: 203 486 5253 Fax: 203 486 4745 Email: GHEBREM@UCONNVM.UCONN.ED Room: M3276 Participation: P

3026215

SHIMSHON GOTTESFELD
LOS ALAMOS NATIONAL LABORATORY
MAIL STOP D429

LOS ALAMOS, NM 87545

Phone: 505-667-0853
Fax: 505-665-4292
Email: gottesfeld@lanl.gov
Room: C3274
Participation: A

1028821

MASANORI HARA
RUTGERS UNIVERSITY
DEPT. OF MECHANICS & MATERIALS SCIEN

PISCATAWAY, NJ 08855-0909

Phone: 908-445-2245
Fax: 908-445-5977
Email:
Room: R17
Participation: D

2035456

JACQUES G JOOSTEN
DSM RESEARCH
P.O. BOX 18

GELEEN, 6160 MD
THE NETHERLAN

Phone: 31-46-761647
Fax: 31-46-761200
Email:
Room: M3381
Participation: A

1037518

ALEXEI R KHOKHLOV
MOSCOW STATE UNIVERSITY
PHYSICS DEPT.

MOSCOW, 117234
RUSSIA

Phone: 7095-1357910
Fax: 7095-9392988
Email: KHOKHLOV@POLLY.PHYS.MSU.SU
Room: R17
Participation: S

1037719

JOON-SEOP KIM
MCGILL UNIVERSITY
DEPT. OF CHEMISTRY
801 SHERBROOKE ST. WEST
MONTREAL, H3A 2K6
QUEBEC, CANAD

Phone: 514-398-6924
Fax: 514-398-3797
Email: KIM@OMC.LAN.MCGILL.CA
Room: C3374
Participation: A

1093015

DOUGLAS J KISEROW
ARMY RESEARCH OFFICE
4300 SO. MIAMI BLVD.

RTP, NC 27709 2211

Phone: 919 549 4213
Fax: 919 549 4310
Email: KISEROW@ARO-EMH1.ARMY.MIL
Room: C3365
Participation: A

1089897

ZHIXIN LI
SUNY AT STONY BROOK
DEPT. OF MATERIALS SCIENCE & ENGIN.

STONY BROOK, NY 11784

Phone: 516-632-8483
Fax: 516-632-8052
Email: ZLI@CCMAIL.SUNYSB.EDU
Room:
Participation: P

1092400

BIN LIN
UNIVERSITY OF MINNESOTA
DEPT OF PHYSICS

MINNEAPOLIS, MN 55455

Phone: 612-624-4195
Fax: 612-624-4578
Email: LINB@MSI.UMN.EDU
Room: M3279
Participation: P

1043976	MORTON LITT CASE WESTERN RESERVE UNIV. MACROMOLECULAR SCIENCE DEPT CLEVELAND, OH 44106	Phone: 216-368-4174 Fax: 216-368-4202 Email: MHL2@PO.CWRU.ODU Room: M3178 Participation: P
1044023	CHU-HENG LIU EXXON RESEARCH & ENGINEERING ER&E, ROUTE 22 EAST ANNANDALE, NJ 08801	Phone: 908-730-2693 Fax: 908-730-3232 Email: CHEIU@ERENJ.COM Room: M3280 Participation: P
2044256	ROBERT Y LOCHHEAD UNIVERSITY OF SOUTHERN MISSISSIPPI DEPT. OF POLYMER SCIENCE SOUTHERN STATION BOX 10076 HATTIESBURG, MS 39406-0076	Phone: 601-266-5482 Fax: 601-266-5504 Email: LOCHHEAD@WHALE.ST.USM.EDU Room: C3268 Participation: A
1088612	FRANK J LUCZAK INTERNATIONAL FUEL CELLS 195 GOVENOR'S HIGHWAY SOUTH WINDSOR, CT 06074	Phone: 203-727-2431 Fax: 203-727-2419 Email: Room: M3281 Participation: A
1092816	MICHAEL A MABE ELSEVIER SCIENCE LTD LANGFORD LANE KIDLINGTON OXFORD, OXON OX5 1GB UK	Phone: 44 1865 843590 Fax: 44 186584 3982 Email: M.MABE@ELSEVIER.CO.UK Room: M3281 Participation: S
1045564	 WILLIAM J MACKNIGHT UNIVERSITY OF MASSACHUSETTS POLYMER SCIENCE & ENGINEERING LEDERLE GRADUATE RESEARCH CENTER AMHERST, MA 01003 	 Phone: 413-545-0433 Fax: 413-545-0082 Email: Room: R18 Participation: D
1046269	SUDHIR MANI UNIVERSITY OF CONNECTICUT DEPARTMENT OF CHEMICAL ENGINEERING U-139, 191 AUDITORIUM ROAD STORRS, CT 06269-3139	Phone: 203-486-2290 Fax: 203-486-4745 Email: SUM94001@UCONNVM.UCONN.ED Room: M3276 Participation: P
1086795	CHARLES MARTIN DOW CHEMICAL COMPANY TEXAS OPERATIONS BUILDING B2825 FREEPORT, TX 77541	Phone: 409-238-3871 Fax: 409-238-0484 Email: CWMARTIN@DOW.COM Room: C3269 Participation: V

1047574	KENNETH A MAURITZ UNIV. OF SOUTHERN MISSISSIPPI DEPT. OF POLYMER SCIENCE HATTIESBURG, MS 39406-0076	Phone: 601-266-5595 Fax: 601-266-5504 Email: KMAURITZ@WHALE.ST.USM.EDU Room: M3283 Participation: S
1092269	MATTHEW MOFFITT MCGILL UNIVERSITY DEPT OF CHEMISTRY, #436 801 SHERBROOKE ST. WEST MONTREAL, QUEBEC H3A 2K6 CANADA	Phone: 514 398 2854 Fax: 514 398 3797 Email: BG32@RUSICB.MCGILL.CA Room: M3376 Participation: P
1050898	ROBERT B MOORE UNIVERSITY OF SOUTHERN MISSISSIPPI DEPT. OF POLYMER SCIENCE SOUTHERN STATION, BOX 10076 HATTIESBURG, MS 39406-0076 USA	Phone: 601-266-4480 Fax: 601 266 5504 Email: RBMOORE@WHALE.ST.USM.EDU Room: M3376 Participation: P
1050964	GRAINNE M MORAN DEPT OF CHEM C/O PINES GROUP UC BERKELEY BERKELEY, CA 84720	Phone: 512 642 2094 Fax: 512 642 9675 Email: GRAINNE@DIRAC.CCHEM.BERKEL Room: P3097 Participation: P
1088513	MARTIN MUSCHOL CENTER FOR MICROGRAVITY & MATERIALS UNIVERSITY OF ALABAMA RI-M65 HUNTSVILLE, AL 35899	Phone: 205-895-6964 Fax: 205-895-6791 Email: MUSCHOL@ATMOS.UAH.EDU Room: M3279 Participation: P
2052161	M MUTHUKUMAR UNIV OF MASSACHUSETTS POLYMER SCIENCE & ENGINEERING LEDERLE GRADUATE RESEARCH TOWER # AMHERST, MA 01003	Phone: 413-545-0433 Fax: 413-545-0082 Email: MUTHUKUM@ECS.UMASS.EDU Room: R13 Participation: S
1053287	DIEP NGUYEN BNL HFBR UPTON, NY 11973	Phone: 516-282-2329 Fax: 516-282-7408 Email: Room: P3295 Participation: P
1089493	MITSUO NISHIDA MCGILL UNIVERSITY DEPT. OF CHEMISTRY, OTTO MASS BLDG. 801 SHERBROOKE STREET WEST MONTREAL, PQ H3A 2K6	Phone: 514-398-2854 Fax: 514-398-3797 Email: NISHIDA@OMC.LAN.MCGILL.CA Room: C3372 Participation: A

1053800	JAAAN NOOLANDI XEROX RESEARCH CENTER OF CANADA 2660 SPEAKMAN DRIVE MISSISSAUGA, ONTARIO L5K2L1 CANADA	Phone: 905-823-7091 Fax: 905-822-7022 Email: JNULA.XRCC@XEROX.COM Room: R18 Participation: S
1086885	EDWARD E PARSONAGE 3M COMPANY BUILDING 201-2N-19 ST PAUL, MN 55144	Phone: 612 736-7381 Fax: 612 733-0648 Email: EEPARSONAGE@MMM.COM Room: M3378 Participation: A
1086092	JOHN W PAUL DUPONT COMPANY P&IP RESEARCH, B-10 PO BOX 1089 ORANGE, TX	Phone: 409 886-6221 Fax: 409 886-6124 Email: Room: OFF Participation: A
1056846	DENNIS G PEIFFER EXXON RESEARCH & ENG. CO. ROUTE 22 EAST-CLINTON TOWNSHIP ANNANDALE, NJ 08801	Phone: 908-730-2372 Fax: 908 730-2536 Email: Room: R18 Participation: S
1086814	KEITH R PLOWMAN DOW USA TEXAS OPERATIONS BUILDING B-2825 2301 BRAZOSPORT BOULEVARD FREEPORT, TX 77541-3257	Phone: Fax: Email: Room: C3270 Participation: S
1058456	WILLIAM S POMPLUN KIMBERLY-CLARK CORPORATION 2100 WINCHESTER RD. NEENAH, WI 54956	Phone: 414-721-5824 Fax: 414 721 4198 Email: Room: M3378 Participation: A
1086803	ROBERT K PRUD'HOMME PRINCETON UNIVERSITY DEPARTMENT OF CHEMICAL ENGINEERING PRINCETON, NJ 08544-5263	Phone: 609-258-4581 Fax: 609-258-0211 Email: PRUDHOMM@PHOENIX.PRINCET Room: R21 Participation: D
1059729	MIRIAM RAFAILOVICH STATE UNIVERSITY OF NEW YORK DEPT OF MATERIALS SCIENCE & ENGINEER STONY BROOK, NY 11794-2275	Phone: 516-632-8498 Fax: 516-632-8052 Email: MIRIAM.RAFAILOVICH@SUNYSB.E Room: P3196 Participation: S

1059852	MURALI RAJAGOPALAN TITLEIST AND FOOD-JOY WORLDWIDE P.O. BOX 965 333 BRIDGE STREET FAIRHAVEN, MA 02719	Phone: 508-979-3405 Fax: 508 979 3903 Email: Room: Participation: A
1059853	PADMAVATHY RAJAGOP BROWN UNIV CHEMISTRYD DEPT PROVIDENCE, RI 02912	Phone: 401-863-3267 Fax: 401-863-2594 Email: CH101001@BROWNVN.BROWN.E Room: P3098 Participation: P
1060755	RICHARD A REGISTER PRINCETON UNIVERSITY CHEMICAL ENGINEERING ENGINEERING QUADRANGLE PRINCETON, NJ 08544	Phone: 609-258-4691 Fax: 609 258-0211 Email: REGSTER@PUCC.PRINCETON.ED Room: M3380 Participation: D
1061714	WILLIAM M RISEN BROWN UNIVERSITY DEPARTMENT OF CHEMISTRY BOX H PROVIDENCE, RI 02912	Phone: 401-863-2611 Fax: Email: WRISEN@BROWN.EDU Room: R21 Participation: P
1090381	RUDY RULKENS MAX-PLANCK INSTITUT FUR POLYMERFOR POSTFACH 3148 MAINZ, D55021 GERMANY	Phone: 496131379250/* Fax: 49 6131379 100 Email: RULKENS@MAX.MPIP-MAINZ.MPG. Room: M3380 Participation: p
1092849	MARIA RUTKOWSKA GDYNIA MARITIME ACADEMY 83 MORSKA STR GDYNIA, POLAND	Phone: 21 95 98 Fax: 48 58 206701 Email: Room: P3297 Participation: P
1087912	MICHAEL J SANSONE HOECHST CELANESE CORP 85 MORRIS AVE SUMMIT, NJ 07901	Phone: 908-522-7572 Fax: Email: Room: OFF Participation: A
1064665	ROBERT F SAVINELL CASE WESTERN RESERVE UNIVERSITY DEPT. OF CHEMICAL ENGINEERING CLEVELAND, OH 44106	Phone: 216-368-2728 Fax: 216-368-3016 Email: SAVINELL@ECHEM.CWRU.EDU Room: R21 Participation: S

1065283	SHULAMITH SCHLICK UNIVERSITY OF DETROIT MERAY DEPT. OF CHEMISTRY DETROIT, MI 48219-0900	Phone: 313-927-1012 Fax: 313-993-1144 Email: Room: P3392 Participation: P
1086798	MANFRED SCHMIDT UNIVERSITAT BAYREUTH PHYSIKALISCHE CHEMIE I POSTFACH 1012 51 BAYREUTH, W-8580 GERMANY	Phone: 49-921553395 Fax: 49-921553393 Email: MANFRED.SCHMIDT@UNI-BAYREU Room: C3271 Participation: S
1066412	MARIAN SEDLAK SLOVAK ACADEMY OF SCIENCES INSTITUTE OF EXPERIMENTAL PHYSICS WATSONOVA 47 KOSICE, 043 53 SLOVAKIA	Phone: 42-956224485 Fax: 42-9536320 Email: MARSED@CCSUN.TUKE.SK Room: Participation: A
1090238	EUGENE L SOKOLOV SUNY AT STONY BROOK DEPT OF CHEMISTRY STONY BROOK, NY 11794-3400	Phone: 516-632-7892 Fax: 516-632-7960 Email: ESOKOLOV@SBCHEM.SUNY-(SB.E Room: M3277 Participation: P
1091247	JOACHIM P SPATZ UNIVERSITAT ULM ORGANISCHE CHEMIE III ALBERT-EINSTEIN-ALLEE ULM, D-83081 GERMANY	Phone: 49 731 5022884 Fax: 49 731 5022883 Email: JOACHIMSPATZ@PHYSIC.UNI.UC Room: M3278 Participation: P
1071428	ROBSON R STOREY THE UNIVERSITY OF SOUTHERN MISSISSIP DEPT. OF POLYMER SCIENCE SOUTHERN STATION, BOX 10076 HATTIESBURG, MS 39406 USA	Phone: 601-266-4879 Fax: 601 266 5635 Email: Room: M3283 Participation: P
1072896	MASAKO TAKASU KANAZAWA UNIVERSITY PHYSICS DEPT., KANAZAWA, 920-11 JAPAN	Phone: 81-76264-6057 Fax: 81-76264-5740 Email: TAKASU@HIWA003.S.KANAZAWA- Room: P3394 Participation: P
1074389	ANDREW TIPTON COVALENT ASSOCIATES, INC. 10 STATE STREET WOBURN, MA 01801	Phone: 617 938-1140 Fax: 617 938-1364 Email: Room: C3366 Participation: A

1074555

DONALD A TOMALIA
MICHIGAN MOLECULAR INSTITUTE
1910 W. ST. ANDREWS ROAD

MIDLAND, MI 48640

Phone: 517-832-5618
Fax: 517-832-5560
Email:
Room: R22
Participation: S

1075238

GEORGE TSAGAROPOUL
MCGILL UNIVERSITY
DEPT OF CHEMISTRY
801 SHERBROOKE ST. WEST
MONTREAL, QUEBEC H3A 2K6
CANADA

Phone: 514 398 2854
Fax: 514 398 3797
Email: TSAGARO@OMC.LAN.MCGILL.CA
Room:
Participation: A

1091151

WALTHER W TSCHARNUT
BROOKHAVEN INSTRUMENTS CORP.
750 BLUE POINT ROAD

HOLTSVILLE, NY 11742

Phone: 516-758-3200
Fax: 516-758-3255
Email: WALTHER@BIC.COM
Room: C3366
Participation: A

1092587

FRIEDEL S VON GOELER
UNIV OF MASS, POLYMER SCI + ENG.
DEPT OF POLYMER SCI + ENG.
SILVIO CONTE BLDG.
AMHERST, MA 01003

Phone: 413 577 1212
Fax: 413 545 0082
Email: FRG@KAMA.PSE.UMASS.EDU
Room:
Participation: P

1079211

GIBERT E WEILL
CNRS AND U L PASTEUR
INSTITUT CH SADRON
6 RUE BOUSSINGAULT
STRASBOURG, CEDEX 67083
FRANCE

Phone: 33-88414015
Fax: 33-88414099
Email:
Room: R22
Participation: S

1079401

ROBERT A WEISS
UNIVERSITY OF CONNECTICUT
INSTITUTE OF MATERIALS SCIENCE
97 NORTH EAGLEVILLE ROAD
STORRS, CT 06269-3136

Phone: 203-486-4623
Fax: 203-486-4745
Email: R.WEISS@IC.AC.UK
Room: R22
Participation: S

1080474

CLAUDINE E WILLIAMS
CNRS - LURE
UNIVERSITE DE PARIS-SUD
BATIMENT 209D
ORSAY, F91405
FRANCE

Phone: 33-1-64-468121
Fax: 33-1-64-464148
Email: WILLIAMS@LURE.U-PSUD.FR
Room: P3395
Participation: D

1092100

MARY C WINTERSGILL
US NAVAL ACADEMY
PHYSICS DEPT

ANNAPOLIS, MD 21402 5026

Phone: 410 293 5508
Fax: 410 293 3729
Email: MWINTER@CHARLESTON.NADN.N
Room: C3267
Participation: P

1086804	DIETRICH WOERMANN UNIVERSITAT ZU KOLN INSTITUT FUR PHYSIKALISCHE CHEMIE LEHRSTUHL I KOLN, 50939 GERMANY	Phone: 221-470-4458 Fax: 221-470-5104 Email: ACP07@RS1.RRZ.UNI-KOELN.DE Room: R23 Participation: S
1081623	JAMES L WORK ARMSTRONG WORLD INDUSTRIES P.O. BOX 3511, BUILDING PRODUCTS R&D 2500 COLUMBIA AVENUE LANCASTER, PA 17004	Phone: 717-396-5364 Fax: 717-396-5486 Email: Room: C3272 Participation: A
1086799	CHI WU THE CHINESE UNIVERSITY OF HONG KONG DEPARTMENT OF CHEMISTRY UNIVERSITY SCIENCE CENTER SHATIN, NT, HONG KONG CHINA	Phone: 852-6036106 Fax: 852-6035057 Email: CHIWU@CUHK.HK Room: C3368 Participation: S
1090237	CHUNHUNG WU SUNY UNIVERSITY AT STONY BROOK CHEMISTRY DEPT STONY BROOK, NY 11794	Phone: 516-632-7892 Fax: 516-632-7960 Email: CWU@SBCHEM.SUNYSB.EDU Room: C3370 Participation: A
1086808	DAN Q WU DUPONT EXPERIMENTAL STATION BUILDING 228 WILMINGTON, DE 19880-0228	Phone: 302-695-3516 Fax: 302-695-1351 Email: WUDG@ESVAX.DNET.DUPONT.CO Room: OFF Participation: S
1082087	GU XU MCMASTER UNIVERSITY DEPT. MATERIALS SCIENCE 1280 MAIN STREET, WEST HAMILTON, ONTARIO L8S 4L7 CANADA	Phone: 905 525 9140X Fax: 905 528 9295 Email: XUGU@MCMAIL.MCMASTER.CA Room: C3368 Participation: A
1086816	HOWARD L YEAGER UNIVERSITY OF CALGARY ACADEMIC AND PLANNING, ADM. BLDG., RM 2500 UNIVERSITY AVENUE DRIVE, N.W. CALGARY, ALBERTA T2N 1N4 CANADA	Phone: Fax: Email: Room: R23 Participation: S
1090240	FENGJI YEH SUNY UNIV AT STONY BROOK DEPT OF CHEM STONY BROOK, NY 11794-3400	Phone: 516-632-7892 Fax: 516-632-7960 Email: FYEH@SBCHM1.SUNYSB.EDU Room: C3370 Participation: P

1082709

ARUN YETHIRAJ
UNIVERSITY OF WISCONSIN
DEPT. OF CHEMISTRY
1101 UNIVERSITY AVENUE
MADISON, WI 53706

Phone: 608-262-0258
Fax: 608-262-9918
Email: YETHIRAJ@CHEM.WISC.EDU
Room: C3273
Participation: P

2083366

THOMAS A ZAWODZINSKI
LOS ALAMOS NATIONAL LAB.
MS D429
MST-11
LOS ALAMOS, NM 87545

Phone: 505-667-0925
Fax: 505-665-4292
Email: ZAWOD@LANL.GOV
Room: R23
Participation: P

1092270

LIFENG ZHANG
MCGILL UNIV, DEPT OF CHEM
ROOM 446, 801 SHERBROOKE ST. W.

MONTREAL, QUEBEC H3A 2K6
CANADA

Phone: 514 398 6924
Fax: 514 398 3797
Email: ZHANG@OMC.LAN.MCGILL.CA
Room: C3374
Participation: P

1088523

PEIGUANG ZHOU
UMASS.
CHEM DEPT.
ONE UNIVERSITY AVE
LOWELL, MA 01854

Phone: 508-932-3828
Fax: 508-934-3013
Email:
Room: M3280
Participation: P

1091150

JIANPING ZU
BROOKHAVEN INSTRUMENTS CORP.
750 BLUE POINT ROAD

HOLTSVILLE, NY 11742

Phone: 516-758-3200
Fax: 516-758-3255
Email: LILY@BIC.COM
Room: P3397
Participation: A